REMARKS

Status of Claims

Claims 22, 33, and 43 are currently amended, and claims 1-21, 25-26, 30, and 36-37 are canceled. Thus, claims 22-24, 27-29, 31-35, 38-43 are pending. Applicant respectfully submits that the amendments to the claims are supported by the specification as filed and that no new matter has been added.

Rejection under 35 U.S.C. § 112, First Paragraph (Enablement)

The Office rejected claims 22-24, 27-35 and 38-43 under 35 U.S.C. § 112, first paragraph, because the specification

> while being enabling for "modulating vascular tone in a **specific patient population** . . . having compromised vascular tissue, comprising administering a pharmaceutically effective amount of a chloride channel blocking agent, wherein the compromised vascular tissue is associated with erectile dysfunction", does not reasonably provide enablement for the phrase "**a patient** having compromised vascular tissue, comprising administering a pharmaceutically effective amount of a chloride channel blocking agent, wherein the compromised vascular tissue is associated with erectile dysfunction." (emphasis in original, pp. 2-3 of 1/3/2006 Office Action)

Applicant has amended the claims to recite that the specific patient population is a male population. Applicant respectfully requests that the Office withdraw the rejection of claims 22-24, 27-35, and 38-43 under 35 U.S.C. § 112 (enablement).

Rejection under 35 U.S.C. § 102(b)

The Office rejected claims 22-24, 27-29, 33-35 and 39-43 under 35 U.S.C. § 102(b) as being anticipated by Delaney *et al.* (1996) evidenced by Kifor *et al.* (US Patent No. 5,658,936), both of record. Applicant asserts that Delaney *et al.* fails to anticipate the present claims.

Claims 22-24, 27-29, and 31-32 relate to methods for using a chloride channel blocking agent to modulate vascular tone in a male patient having compromised vascular tissue associated with erectile dysfunction. Claims 33-35 and 39-42 relate to methods for using a chloride channel blocking agent to modulate penile vascular tone in a male mammal in need

thereof. Claim 43 recites a method for treating erectile dysfunction in a male patient. Applicant respectfully asserts that the present claims are not anticipated by Delaney *et al.*

The Office stated that because Delaney *et al.* teach that "one patient had experienced increased libido during his course of treatment meets Applicant's claimed limitation" (Office Action at page 11), and that the "patient, condition to be treated and the effect are the same" (Office Action at page 8). In order for Delaney *et al.* to teach that the patient, condition to be treated and the effect be the same as the claimed invention, Delaney *et al.* would need to teach a method of administering tamoxifen to a male patient having compromised vascular tissue associated with erectile dysfunction in order to modulate the vascular tone in the patient having compromised vascular tissue associated with erectile dysfunction, a method to modulate penile vascular tone, and a method of treating erectile dysfunction. Applicant respectfully asserts that Delaney *et al.* does not teach these methods. Instead, the Delaney *et al.* reference is a single case report of a male patient that has undergone a radical mastectomy followed by chemotherapy, who subsequently developed multiple bone metastases. In order to treat the metastatic breast cancer, the patient was given palliative radiotherapy to the thoractic spine, followed by a daily administration of tamoxifen. At no point do Delaney *et al.* disclose that the patient had compromised vascular tissue associated with erectile dysfunction, as recited in claims 22-24, 27-29, and 31-32. Further, at no point do Delaney *et al.* disclose that the patient was in need of modulated penile vascular tone as recited in claims 33-35 and 38-42, or was diagnosed with erectile dysfunction as recited in claim 43. Delaney *et al.* fail to even suggest that tamoxifen might be useful to modulate penile vascular tone in a patient with erectile dysfunction.

Further, the Office states that an "explanation of why that effect occurs does not make novel since the treatment of the conditions encompassed by the claims." (Office Action at page 8). Applicant, however, respectfully points out that they are not making a "mechanism of action" argument, but instead are asserting that there is a lack of causation (*i.e.*, a cause-and-effect relation) between the administration of tamoxifen and the effect observed by Delaney *et al.* Applicant asserts that Delaney *et al.* do not show a correlation between the administration of tamoxifen to the patient and the observed increase in libido in the patient. As discussed above, the Delaney *et al.* reference discusses a case history of one male patient with metastatic breast cancer. The man was treated with tamoxifen, and during the middle portion of the period during which he was treated with tamoxifen, he experienced increased libido.

According to Delaney *et al.*, the patient began tamoxifen treatment in April of 1993. Ten months later, in February of 1994, he reported that he had experienced significantly enhanced libido for the immediately preceding six months. It is important to note that the onset of increased libido did not occur until the patient had been taking tamoxifen for about four months. Moreover, when the patient was reevaluated in January of 1995, his libido had returned to normal levels despite the fact that he continued tamoxifen treatment. In other words, the patient's increased libido was not observed until the patient had been on tamoxifen for a several months, and it resolved before the patient discontinued his tamoxifen treatment. Thus, Delaney *et al.* merely discloses that one male breast cancer patient on a tamoxifen regimen had experienced an increased libido during the course of treatment, and that the period of time in which he had an increased libido was not co-extensive with the period of time in which he was administered tamoxifen.

Delaney *et al.* do not report that any studies were conducted to determine whether the tamoxifen treatment caused the patient's increase in libido. The authors of Delaney *et al.* were unsure as to the cause of the increased libido. They speculated that it may have been related to the relatively young age of the patient. They do not disclose any evidence that tamoxifen treatment and increased libido were causatively linked. In fact, in view of the patient not developing increased libido until more than four months after initiation of tamoxifen treatment and then ceasing to have this symptom before completion of the tamoxifen treatment, one of skill in the art logically would attribute the increased libido symptom to some other factor. Thus, Delaney *et al.* fail to establish a causative link between tamoxifen treatment and increased libido.

In summary, Delaney *et al.* do not anticipate claims 22-24 and 27-29, because Delaney *et al.* do not teach or suggest methods for using a chloride channel blocking agent to modulate vascular tone in a male patient having compromised vascular tissue associated with erectile dysfunction, as recited by claims 22-24 and 27-29. Instead, Delaney *et al.* teach treating a male breast cancer patient with tamoxifen. Delaney *et al.* do not anticipate claims 33-35 and 39-42, because Delaney do not teach or suggest methods for using a chloride channel blocking agent to modulate penile vascular tone in a mammal in need thereof. Delaney *et al.* do not discuss modulating penile vascular tone at all. Delaney *et al.* do not anticipate claim 43, because Delaney *et al.* do not teach or suggest a method for treating erectile dysfunction. They do not

disclose any evidence that tamoxifen treatment and the observed increased libido were causatively linked.

Thus, Applicant asserts that the pending claims are not anticipated by Delaney *et al.*, and respectfully requests that the Office withdraw the rejection of claims 22-24, 27-29, 33-35, and 39-43 under 35 U.S.C. § 102(b).

Rejection under 35 U.S.C. § 103(a)

The Office rejected claims 31, 32, and 38 under 35 U.S.C. § 103(a) as being unpatentable over Delaney *et al.* (1996) and in further in view of Zhang *et al.* (U.S. Patent No. 6,266,560) and Drug Facts and Comparisons, 1997, all of record.

The Office stated that while Delaney *et al.* does not expressly teach the route of administration set forth in claims 32 and 38, or the further administration of the agents set forth in claim 31, that Drug Facts and Comparisons teaches that tamoxifen is commercially available in oral form, and that the Zhang *et al.* patent reports that vasodilators are useful for treatment of erectile dysfunction. Thus, the Office concluded that it would have been obvious to a person having ordinary skill in the art to administer tamoxifen orally. The Office also concluded that it would have been obvious to incorporate a vasodilator agent with tamoxifen because vasodilators are useful for treatment of erectile dysfunction.

Claims 31 and 32 depend from claim 22 (which relate to methods for using a chloride channel blocking agent to modulate vascular tone in a male patient having compromised vascular tissue associated with erectile dysfunction), and claim 38 depends from claim 33 (which relates to methods to modulate penile vascular tone in a mammal in need thereof). As discussed above, Delaney *et al.* discloses only that one male patient experienced increased libido during a portion of the time for which he was on a tamoxifen regimen for the treatment of metastatic breast cancer, and that causation was not established for the increased libido experienced. At no point does the Delaney *et al.* reference teach or suggest a method of modulating vascular tone in a male patient having compromised vascular tissue associated with erectile dysfunction, or a method of modulating penile vascular tone.

The Zhang *et al.* patent and the Drug Facts and Comparisons document fail to remedy the deficiencies of Delaney *et al.* Neither of these documents suggest that a chloride channel blocking agent such as tamoxifen would be useful either to modulate vascular tone in a male

patient having compromised vascular tissue associated with erectile dysfunction or to modulate penile vascular tone in a mammal in need thereof. Moreover, the combination of the Delaney *et al.* case study with the Zhang *et al.* patent and the Drug Facts and Comparisons document do not suggest that a chloride channel blocker would be useful to modulate vascular tone either alone or in combination with another agent (*e.g.*, a vasodilator), regardless of how it was administered. Thus, the combination of these three documents does not render claims 31, 32, and 38 obvious.

In light of the above, Applicant respectfully requests reversal of the Office's rejection of claims 31, 32, and 38 under 35 U.S.C. § 103(a).

Conclusion

The Examiner is invited to contact Applicant's Representative at the below-listed telephone number if there are any questions regarding this Response or if prosecution of this application may be assisted thereby. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 50-3503. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extension fees to Deposit Account 50-3503.

Respectfully submitted,

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